

Amendments to the Specification

Please replace the paragraph beginning at page 29, line 3, with the following amended paragraph.

Latex Biosensor Patch Shown in Figure 16. This device was created by coating a cell-latex mixture onto an 8 hole ½ inch diameter template on a polyester substrate. The coating was then dried. A sealant coating was coated on top of the cell coating with the template still in place. Following drying of the sealant coating the template was removed leaving two layered patches of approximately 60 micron thickness on the substrate. A second template consisting of ½ inch by 1 inch rectangular holes was applied on top of the patches so that 1/4 inch of the patches were covered and so that the open area connected to opposing patches. A porous channel layer was coated on top of the second template and dried. The second template was subsequently removed. A mask consisting of ½ inch circles was applied to each patch. A spacer was laid around the patches on each side to prevent contact between the Mayer rod and the masks during coating. A nonporous coating was subsequently coated on top of the masked patches and the porous channel layer and dried before removal of the masks. Each patch with its channel was subsequently excised so that each patch had a ½ inch channel attached. 5 mm of the channel end was placed in induction buffer, leaving the circular part with cells out of direct contact with the induction buffer. Induction at 100 nM Hg²⁺ resulted in a photon emission count of more than 50,000 counts per minute resulting from the mercury induced expression of luciferase. Induction at 0 nM Hg²⁺ resulted in less than 110 photon counts per minute.

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